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Attorney Docket 101.003  
Response to June 2, 2005 Office Action  
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### REMARKS

Claims 19-27, 29, 30, and 48-59 are currently pending in the application. Favorable reconsideration and allowance of this application is respectfully requested in light of the remarks that follow.

#### Claim Rejections Under 35 U.S.C. § 103

The rejection of claims 19-24, 25, 26, 27-30, and 48-55 as being unpatentable over D. Reay, "Learning from Experiences with Compact Heat Exchangers" (the Reay reference) in view of Harandi, U.S. Patent No. 4,956,510 (the '510 patent) is respectfully traversed because, *inter alia*, there is no teaching or suggestion to combine or modify the references to produce the claimed invention. Furthermore, even if the references were combined, the claimed invention would not result.

More specifically, in each of independent claims 19, 57, 58 and 59, these claims require that a heat exchanger be positioned in operative contact with a reaction zone so as to receive reactants exiting the reaction zone for heat exchange purposes. Furthermore, these claims require that the heat exchanger be formed of a number of printed circuit heat exchanger (PCHE) plates, which perform the necessary heat exchanger function for the reactants exiting the reaction zone into the heat exchanger. In contrast, as recognized by the Examiner in the Office Action, the Reay reference fails to teach a heat exchanger in operative contact with a reaction zone so as to receive the reactants exiting the reaction zone for heat exchange purposes.

The Harandi '510 patent is unable to cure this deficiency. More specifically, the Harandi '510 patent discloses a method for quenching effluent from a reaction zone by contacting the effluent with a relatively cooler, regenerating catalyst in a direct heat exchange process. The regenerated catalyst is directly mixed with the reaction zone effluent such that the regenerated catalyst and the effluent are intermixed with one another. The catalyst is subsequently separated from the effluent after heat exchange with the effluent.

This is in direct contrast to the limitations for the heat exchanger formed of the PCHE plates in each of independent claims 19, 57, 58 and 59 of the application which require that the

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heat exchanger include discrete heat exchange pathways formed by the PCHE plates for fluids undergoing heat exchange in the heat exchanger in order to prevent the mixing the fluids with one another in the claimed novel reactor configuration. Thus, because the claimed printed circuit heat exchanger provides heat exchange between fluids flowing through separate, discrete pathways in the heat exchanger, as shown in the Reay reference, and the Harandi '510 patent discloses the heat exchange between fluids by directly mixing the fluids with one another, these references teach directly away from each other and therefore cannot suggest any combination of the references in order to achieve the results of the claimed invention.

As a result, because the Reay reference and Harandi '510 patent fail to disclose or suggest each of the elements of claims 19, 57, 58 and 59, from which the remaining claims in this rejection depend, applicants believe that claims 19-24, 25, 26, 27-30 and 48-59 are allowable. Applicants therefore respectfully request that the Examiner withdraw the rejections to claims 9-24, 25, 26, 27-30 and 48-59.

#### CONCLUSION

It is submitted that claims 19-27, 29, 30 and 48-59 are in compliance with 35 U.S.C. § 103 and each define patentable subject matter. A notice of allowance is therefore respectfully requested.

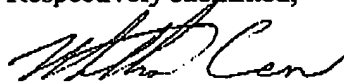
Applicant requests a one-month extension of time from September 2, 2005 to October 2, 2005 in which to respond to the Office Action dated June 2, 2005. Authorization is given to charge Deposit Account No. 50-1170 the amount of \$120.00 for payment of the extension fee by a large entity. Further authorization is given to charge any additional fees or credit any overpayment to the deposit account.

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In view of the foregoing remarks, the application is believed to be in *prima facie* condition for allowance and such action is respectfully requested. The Examiner is invited to contact the undersigned by telephone if it would help expedite the allowance of this application.

Respectfully submitted,



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9/13/05

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